

## A SCALE TO MEASURE ATTITUDE OF FARMERS TOWARDS FARM DIVERSIFICATION ON CAUVERY DELTA ZONE

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### ABSTRACT

*The present study was designed to develop a scale to measure the attitude of Cauvery delta farmers towards farm diversification. Farmers in the delta region used to cultivate the irrigation intensive crops because of the abundance of water. But recent days due to drought and cyclone, farmers diversify their crops to high returns using low water and labor requirement. Trustone's equal appearing interval scale construction method was employed to analyze 66 statements. Finally, six statements (three positive and three negative) were selected with reliability value 0.764.*

**KEYWORDS:** Attitude, Farm Diversification & Scale

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### INTRODUCTION

Diversification assists the farmers to get away from crop failure and benefits them economically. Moreover, diversification is specifically followed by the farmers resides in nearby urban areas, farmers with high land holdings, literally strong and innovative farmers. In Tamil Nadu, Cauvery Delta Zone has been chosen for this study because farmers in the delta region are shifting from water-intensive crops like paddy, sugarcane, and banana to the less water-intensive crops like maize, millets, cotton, pulses, etc., (Season and Crop report, 2015-16). In this context, the attitude of farmers towards farm diversification in the Cauvery Delta Zone was studied.

### MATERIALS AND METHODS

To measure the psychological tendency of farm diversification of farmers, equal appearing interval scale developed by Trustone and Chave (1929) was used with the following steps

- Identification of dimensions
- Collection of attitude items
- Item scoring
- Computation of scale values and Q values
- Testing the Reliability and Validity

Attitude towards farm diversification was operationalized as the mental disposition of the Cauvery delta farmers about shifting from the traditional, labor and irrigation intensive crops to less intensive crops and shifting from farm sector to non-farm sector in varying degrees of favorableness or unfavorableness. Possible statements concerning the psychological object i.e. 'farm diversification' with respect to profit maximization, adoptability to changing environment, less risk, drudgery reductions, and eco-friendly aspects were collected based on the review of literature, discussion with scientists and experts in the discipline of agriculture. Totally 160 statements were collected which were organized and structured in the form of items. The items were screened by the informal criteria suggested by Edwards (1969), which are free from double negative, unambiguous, convey only one idea, easy to understand and make sense in the first reading itself was chosen. In this process, 66 statements were finalized.

The 66 statements were then subjected to judge's opinion on an eleven-point continuum ranging from most unfavorable, neutral to most favorable. The list of statements was sent to judges who comprised of scientist and experts of State Agricultural Universities and extension officials of the State Department of Agriculture. By applying the formula suggested by Thurstone and Chave (1929), the scale values and Q values were calculated for 66 statements.

$$S = L + \{0.5 - \Sigma pb / pw\}i$$

where

S= The median or scale value of the statement,

L= The lower limit of the interval in which the median falls,

pb = The sum of the proportions below the interval in which the median falls,

pw= The proportion within the interval in which the median falls,

i= The width of the interval and is assumed to be equal to 1.0

$$Q = C75 - C25$$

where Q= Inter-quartile range,

$$75\text{th centile } C75 = L + \{0.75 - \Sigma pb / pw\}i$$

$$25\text{th centile } C25 = L + \{0.25 - \Sigma pb / pw\}i$$

**Table 1: The Computed Scale and Q Values are Tabulated in Table**

S. No.	Statement No.	Scale Value	Q Value	Difference Between Successive Scale Values	Cumulative Value of the Differences	Equal Appearing Class Intervals	Compartment
1.	1	13.1	16.66				
2.	<b>63</b>	11.5	-3.03	1.6	1.6	<b>1.6</b>	<b>I</b>
3.	<b>33</b>	10.5	2	1	2.6	<b>3.2</b>	<b>II</b>
4.	28	10.21	28.16	0.28	3.6		
5.	64	9.75	16.66	0.46	3.88		
6.	42	9.64	1.36	0.10	4.35		<b>III</b>
7.	<b>66</b>	9.64	0.37	0	4.45		
8.	65	9.5	3.1	0.14	4.45		
9.	2	9.3	0	0.2	4.6		
10.	59	9.25	13	0.05	4.8	<b>4.8</b>	
11.	26	8.92	3.45	0.32	4.85		
12.	16	8.8	1.85	0.12	5.17		
13.	29	8.62	5.6	0.17	5.3		

Table 1: Contd.,

14.	51	8.5	1.23	0.12	5.47		
15.	3	8.25	1.08	0.25	5.6		
16.	12	8.25	10	0	5.85		
17.	6	8.22	5.775	0.02	5.85		
18.	22	8.21	1.13	0.01	5.87		
19.	<b>39</b>	8.12	-4.5	0.08	5.88		<b>IV</b>
20.	49	8	0.91	0.12	5.97		
21.	61	8	16.66	0	6.1		
22.	21	7.92	5.83	0.07	6.1		
23.	23	7.87	3.47	0.05	6.17		
24.	53	7.87	4.85	0	6.22		
25.	60	7.87	3.33	0	6.22		
26.	24	7.8	16.6	0.07	6.22		
27.	5	7.75	7.33	0.05	6.3		
28.	15	7.7	6	0.05	6.35		
29.	35	7.64	6	0.05	6.4	<b>6.4</b>	
30.	45	7.64	3.8	0	6.45		
31.	14	7.5	4.21	0.14	6.45		
32.	<b>17</b>	7.5	-3.92	0	6.6		
33.	20	7.5	30.62	0	6.6		
34.	18	7.37	-2.83	0.12	6.6		
35.	41	7.37	8.05	0	6.72		
36.	25	7.35	10	0.01	6.72		
37.	36	7.3	36.12	0.05	6.74		
38.	43	7.25	1	0.05	6.8		
39.	32	7.2	7.48	0.05	6.8		
40.	40	7.2	0.41	0	6.9		
41.	38	7.12	5.2	0.07	6.9		
42.	47	6.87	4.16	0.25	6.97		<b>V</b>
43.	9	6.75	5.79	0.12	7.22		
44.	10	6.75	6.25	0	7.35		
45.	4	6.5	2.86	0.25	7.35		
46.	11	6.5	36.5	0	7.6		
47.	34	6.5	10	0	7.6		
48.	48	6.5	4.16	0	7.6		
49.	56	6.3	2.65	0.2	7.6		
50.	8	6.2	5.72	0.1	7.8		
51.	54	6.2	2.5	0	7.9		
52.	27	6	16.6	0.2	7.9	<b>8</b>	
53.	19	5.87	5.25	0.12	8.1		
54.	13	5.8	7.14	0.07	8.22		
55.	<b>62</b>	5.8	-2.66	0	8.3		
56.	57	5.7	4.76	0.1	8.3		
57.	55	5.5	5.07	0.2	8.4		
58.	37	5.37	11.14	0.12	8.6		
59.	31	5.37	3.66	0	8.72		<b>VI</b>
60.	50	5.37	3.23	0	8.72		
61.	46	5.25	4.16	0.12	8.72		
62.	7	5	5.12	0.25	8.85		
63.	44	4.78	2.77	0.21	9.1		
64.	30	4.5	3.32	0.28	9.31		
65.	52	4.5	-4.5	0	9.6		
66.	58	3.78	5.59	0.71	9.6	<b>9.6</b>	

The statements were arranged based on descending order of scale values along with the Q and statement numbers respectively. The difference between the scale values and the cumulative total of the computed differences were worked out. Considering the difficulties in interviewing the farmers six compartments were made to select six statements as one statement from each compartment. The last cumulative value of the differences (9.6) were divided by 6 and taken it as the width of the first class interval (1.6). The second interval (3.2) was computed by adding the first class interval width with

the same value. Consequently, adding the value of the first width interval (1.6) with the second (3.2) gives the third interval (4.8), thus all the six intervals were calculated.

Corresponding Q values and scale values were considered to select the attitude statements for the study. The items those having highest scale values and respectively lowest Q values were chosen from each compartment. Items which considering the dimensions of farm diversification, represented the universe of content, psychological values were carefully selected.

**Table 2: Final Set of Attitude Items Selected with the Corresponding Scale and 'Q' Values**

	Statements	Q Value	S Value	Nature of the Statement
17	It is difficult for anyone to go for diversification as it demands more labor and cost	-3.92	7.5	Unfavorable
33	Double the production and triple the income is only possible through diversification	2	10.5	Favorable
39	Diversification of crop is nothing but a waste of time and energy in the name of innovativeness	-4.5	8.12	Unfavorable
62	Diversified farmers are worrisome farmers as there is uncertainty involved in getting steady income	-2.66	5.8	Unfavorable
63	The risk of crop failure can be avoided through diversification	-3.03	11.5	Favorable
66	To cope up with the climatic change shift in cultivation from conventional to diversified crop is inevitable	0.37	9.64	Favorable

### Reliability of the Scale

The reliability of the scale was calculated using the split-half method. The statements were divided into two equal halves with odd-numbered statements in one set and even numbered in the other. The statements were checked with 30 diversified farmers in a non-sample area.

The split half-test reliability coefficient 'r' was 0.618, which was significant at one per cent level of probability. Moreover, the reliability coefficient of the whole test was computed using the Spearman-Brown prophecy formula. The whole test reliability  $r_{tt}$  was 0.764. According to Singh (2008) when the purpose of the test is to compare the mean scores of the two groups of narrow range a reliability coefficient of 0.50 or 0.60 would suffice. Hence the constructed scale is reliable as the  $r_{tt}$  was greater than 0.60.

### Validity of the Scale

The validity of the content of scale was examined by discussing with specialists of the extension and statistics. Specialists examined and realized appropriateness of each statement to measure the attitude of farmers towards diversification.

### Administration of the Scale

The attitude scale was administered on the sample of 240 diversified farmers on Cauvery delta zone, who were asked to express their reaction in terms of their agreement or disagreement with each item by selecting one of five response categories viz., 'strongly agree', 'agree', 'undecided', 'disagree', and 'strongly disagree'. For positive statements scores of 5, 4, 3, 2, and 1 were given and for negative statements, the scoring procedure was reversed. The scores range from 30 (max) to 6 (min). The responses are grouped as less favorable, moderately and highly favorable by using the cumulative

frequency method.

## CONCLUSIONS

Equal-Appearing Interval method scale developed by Thrustone and Chave (1929) was used in this study to measure the attitude of delta farmers towards farm diversification. The reliability and validity of the statements checked out. Reliability coefficient should be between from 0.5 to 1 is considered as reliable. The result 0.764 shows the test is more reliable. As there are limited study and tools for measuring Cauvery delta farmers attitude towards farm diversification. The present study will support further studies by adopting the scale developed.

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